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Phan, Hung Ai; Nguyen, T. T. L.; Arendt-Nielsen, Lars; Wang, Kelun

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Pain and discomfort after intraoral injection of epinephrine-containing anesthetic solutions

H.A. Phan*, T.T.L. Nguyen*, Lars Arendt-Nielsen**, Kelun Wang**
(*Faculty of Odonto Stomatology, University of Medical Sciences - Vietnam,
Ho Chi Minh City, Vietnam

**Center for Sensory-Motor Interaction, Department of Health Science and Technology, Faculty
of Medicine, Aalborg University, Denmark)

Abstract

Objectives: The objective of this study was to compare the pain intensity and discomfort produced by 3% mepivacaine plain and 2% lidocaine with 1:100,000 epinephrine during local anesthesia in the maxilla among Vietnamese youths

Methods: A randomized, double-blinded, placebo- controlled clinical trial was conducted in 107 healthy volunteer dental students (56 males and 51 females) age between 22-24 at the Faculty of Odonto-Stomatology, HoChiMinh city, Vietnam. Each subject received 2 topical anesthetics (on each buccal mucosa of maxillary central incisors) and then 2 injections using metal syringe. The coded topical application was placebo or topical anesthetic gel (20% Benzocaine gel). The modified needle was a traditional 27-gauge with injection depth of 1.5mm. Allocation to side was randomized; operator, volunteers and outcome assessor were blinded to the identity of the topical anesthetic and the local anesthetic solution . After 5 seconds of needle insertion using bite-rest on-pull injection technique, some drops of anesthetic solution were released. After that, the same procedure was conducted on the rest site. Volunteers recorded injection pain intensity and discomfort on VAS. The pain categories were clasified basing on the VAS. The Chi Square test was applied.

Results: There were no statistical significant differences in perceived pain and discomfort on injection of 2% lidocaine with 1:100.000 epinephrine or 3% mepivacaine plain (p-value=0.61 with placebo and p-value=0.29 with benzocaine). In addition, the greatest majority of injection had a score of 0 (210/214 injections)

Conclusions: The acidic nature of the drug is not reponsible for the pain caused by the local anesthetic